THE CITY OF NEW YORK
LAW DEPARTMENT
100 CHURCH STREET
NEW YORK, NY 10007

ZACHARY W. CARTER
Corporation Counsel

HALEY STEIN
phone: 212-356-2320
fax: 212-356-1148
email: hstein@law.nyc.gov

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Via Email
Mr. Joel Singerman
Acting Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway –20th Floor
New York, NY 10007-1866
Singerman.Joel@epa.gov

Re: **Wolff-Alport Draft Human Health Risk Assessment Report**

Dear Mr. Singerman:

The City of New York ("City") submits the following comments on the United States Environmental Protection Agency's ("EPA") Draft Human Health Risk Assessment Report ("Draft HHRA") for the Wolff-Alport Chemical Company Site ("Wolff-Alport" or "Site"), which was developed to characterize potential human health risks associated with the Site in the absence of any remedial action. The City appreciates this opportunity to comment on this draft document and requests that these comments be included in the administrative record for the Site.

Overly Conservative Risk Assumptions

The Draft HHRA's risk characterization for radionuclides relies solely on the high-end estimate of individual exposure and risk, known as the reasonable maximum exposure ("RME"). Draft HHRA at ES 4-5. However, this approach overstates risk and the Draft HHRA should have considered more realistic risk scenarios and associated pathways in the determination of the RME.

Consistent with EPA guidance, the HHRA's risk characterization for radionuclides should have considered central tendency exposure ("CTE") estimates, which account for the average estimate of individual risk in the context of site specific pathway and risk scenarios. *See* "Distribution of the 'Radiation Risk Assessment at CERCLA Sites: Q & A'", June

13, 2014 ("EPA Guidance"), at Q-30, 32. While the RME assesses the reasonable "worst case scenario", i.e. the upper 95th percentile of exposures, the CTE focuses on intakes that are within the "average" range of exposures. EPA guidance provides that estimates of radiation risk should include both RMEs and CTEs to account for uncertainty and variability in estimating risk from exposure to radioactive materials, such as differences in individual intake rates, body weights, exposure frequencies and exposure durations. *Id*. The Draft HHRA states that reliance solely on RME is appropriate in this case because background concentrations of radionuclides were above the range of acceptable risk for residential exposure. Draft HHRA at ES-4, 5. However, the HHRA fails to provide any support for its conclusion that consideration of CTE is unwarranted when background levels exceed EPA's risk range. Furthermore, this justification treats background radiation sources the same as radiation sources introduced from the Site, which is inconsistent with EPA guidance. EPA Guidance, Q-40. Lastly, EPA's slope factors should be applied to unit intake above the site reference area concentrations for pathways used in both RME and CTE scenarios. For these reasons, the City believes that the HHRA's risk assessment for radionuclides is overly conservative because it relies exclusively on the RME exposure scenario, without taking into account background concentrations of radionuclides as well as more realistic and less conservative risk scenarios.

Inclusion of Insignificant and Unlikely Risk Exposure Pathways

The HHRA includes a number of risk pathways that are unlikely or insignificant for the Wolff Alport Site, and, consistent with EPA guidance, these pathways should be deleted. EPA guidance provides that exposure pathways should be based upon "site-specific conditions" and that "some exposure pathways may not be appropriate for a given site and may be deleted." EPA Guidance, Q-12. Among other things, inclusion or deletion of exposure pathways should take into consideration the site's hydrology, potential receptors, and current and potential future land use. *Id*. As explained below and in the City's previous comment letters to EPA, groundwater, school-related pathways, discharges from Newtown Creek, and dermal contact for radionuclides represent unreasonable and unlikely pathways that do not accurately reflect site conditions.

The HHRA considered groundwater as a drinking water pathway for future residents and commercial workers. Draft HHRA at 4-11. As stated in the City's May 12, 2016 letter to EPA, re: *Wolff-Alport Screening Criteria for the RI*, groundwater in the area of the Site is not, and has never been, used as a source of drinking water, or for any other use by the City. Nor does the City plan to use groundwater as drinking water in this area in the foreseeable future, and it is unclear that such a use would even be feasible. The HHRA acknowledges this fact, but nonetheless, and without further explanation, identifies groundwater as a drinking water pathway. Draft HHRA at 4-11. This is contrary to EPA's own guidance that exposure pathways should be based upon site specific conditions, including hydrology, potential receptors, and future land use. EPA Guidance, Q-12. Therefore, this contaminate pathway should be eliminated from further consideration in site dose assessment modeling.

Next, the HHRA's identification of surface and subsurface soil as a risk pathway for school children at the local school (IS-384) is unsupported by the evidence. As EPA is aware, IS-384 has been the subject of extensive radiological testing in 2010, 2012, and 2015, all of which found radionuclides in soils and radon levels in the school to be within background

ranges. EPA's most recent testing in 2015 included air and soil testing in and around the school building which found no indication that students at IS-384 are exposed to ionized radiation from the Site while at school. *See* City's September 26, 2016 letter to EPA re: Wolff-Alport Draft Human Health Assessment RAGS Part D Tables 1 and 4 Series and Conceptual Site Model. Therefore, there is no support to continue to include school children as possible receptors or the school as a potential risk pathway.

Similarly, the City reiterates its position that there is no indication that Site-related contamination in or around the Combined Sewer System ("CSS") extends beyond the immediate vicinity of the Site, or that any Site-related contamination is being discharged into Newtown Creek. *See* the City's August 16, 2016 letter to EPA re: *EPA's Draft Ecological Screening Evaluation Technical Memorandum*. Regardless, Newtown Creek is subject to its own Remedial Investigation under CERCLA, which will evaluate any potential health risks from the Creek.

Lastly, dermal absorption should not be included in the HHRA as a risk pathway because it is "… typically not a significant exposure pathway for radionuclides and generally need not be considered" for radionuclides. EPA Guidance, at Q-10. However, the HHRA identifies dermal contact as one of the pathways used to estimate risk, without explaining why it should be considered here. *See* HHRA 4-1, 4-4, 4-5. In this case, contribution to dose through dermal contact with contaminated soil would be extremely low, especially when compared to exposure through possible ingestion. EPA should either explain its inclusion or delete dermal absorption as a risk pathway.

Potassium-40 Should Be Considered as Part of Background Radiation

The HHRA identifies Potassium-40 as a potential health risk via consumption of contaminated groundwater, "but not for several centuries." Draft HHRA ES-8. However, Potassium-40 should be considered as part of background radiation and not as a contaminant of concern. Potassium-40 is commonly found in food products and many common building materials including Gypsum products, concretes, cements, clay bricks, granites, and wood and is a commonly found in surface soils. The Draft HHRA acknowledges that the Potassium-40 identified at the site is "probably naturally occurring" and unlikely to have been enhanced by site operations. Draft HHRA, ES-8. Indeed, there is no indication that Potassium-40 was enhanced or otherwise concentrated in site wastes or product materials at the Site. By treating it as a site contaminant rather than as part of background conditions, the Draft HHRA assigns it an additional dose contribution since Potassium-40 is already accounted for as background concentrations.

Lastly, as discussed above, the pathway identified in the Draft HHRA for Potassium-40—groundwater being used as drinking water in a few hundred years—is not reasonable or foreseeable. Therefore, Potassium-40 as well as all naturally occurring concentrations of radioactive materials at concentrations of natural background levels should be excluded from site dose assessments and contaminants of concern.

Conclusion

The City appreciates the opportunity to comment on the Draft HHRA, and looks forward to continuing to work with EPA and others to address historic contamination at the Site.

Sincerely yours,

____/s/_____

Haley Stein
Assistant Corporation Counsel

cc: Jean Regna